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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,366	11/13/2003	Christoph A. Wasshuber	TI-36280 (032350.B536)	1864

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EXAMINER

NGUYEN, THINH T

ART UNIT	PAPER NUMBER
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2818

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AL

Office Action Summary	Application No. 10/714,366	Applicant(s) WASSHUBER, CHRISTOPH A.	
	Examiner Thinh T. Nguyen	Art Unit 2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED OFFICE ACTION

1. Applicant's election of claims 1-11 without traverse for prosecution without traverse of the Application in the communication with the Office on 3/10/2005 is acknowledged.

Specification

2. The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant cooperation is requested in correcting any errors of which the applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(b/e) that form the basis for the rejections under this section made in this office action.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. The Examiner noted that claims 1-11 are hybrid product by process for some of the limitations recited in those claims for example in claim 1: --" the active region **formed by epitaxially grown** substrate material. "-- this limitation "**formed by epitaxially grown.**" is

taken to be a product by process limitation and considered *non-limitation*. In a product-by-process claim, it is the patentability of the claimed product and not of the recited process steps, which must be established. Therefore, when the prior art discloses a product, which reasonably appears to be identical with or only slightly different than the product claimed in a product-by process claim, a rejection based on sections 102 or 103 is fair. The Patent Office is not equipped to manufacture products by a myriad of processes put before it and then obtain prior art product and make physical comparisons therewith. In re Brown, 173 USPQ 685 (CCPA 1972). Also, a product by process claim directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ I S at 17 (footnote 3). See In re Fessman, 180 USPQ 324, 326 (CCPA 1974); In re Marosi et al., 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a " product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

Note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Marosi et al, 218 USPQ 289; and particularly In re Thorpe, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a

new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw makes clear.

5. Claim 1, 3,4 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang et al. (U.S. Patent 5,554,562) or Gardner et al. (US patent 6,362,510) or under 35 U.S.C. 102(e) as being anticipated by Hsu (US patent 6,613,626)

REGARDING CLAIM 1

Chang (the abstract, fig 11) disclose a semiconductor structure used in manufacturing a semiconductor device, comprising: a substrate layer (fig 11 layer 100) first and second isolation regions formed by etching (column 2 line 15-16) an oxide layer provided on the substrate layer to define an epitaxial growth surface of the substrate layer for epitaxial growth of a substrate material on the epitaxial growth surface between the first and second isolation regions; and an active region (fig 11 layer 114) comprising the epitaxially-grown substrate material between the first and second isolation regions, the active region formed by epitaxially growing the substrate material on the epitaxial growth surface of the substrate layer.

Similarly, Gardner et al.(the title, the abstract, fig 3,fig 4) and Hsu (the abstract, fig 7,) disclose the same invention

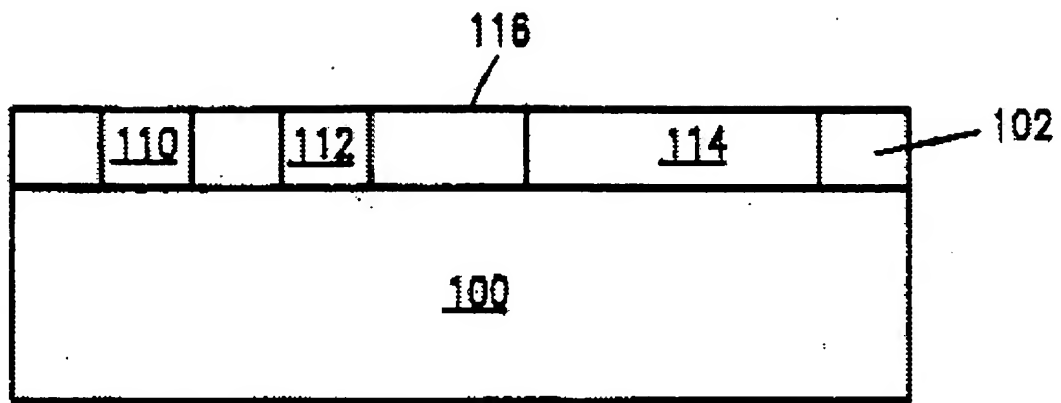


FIG. 11

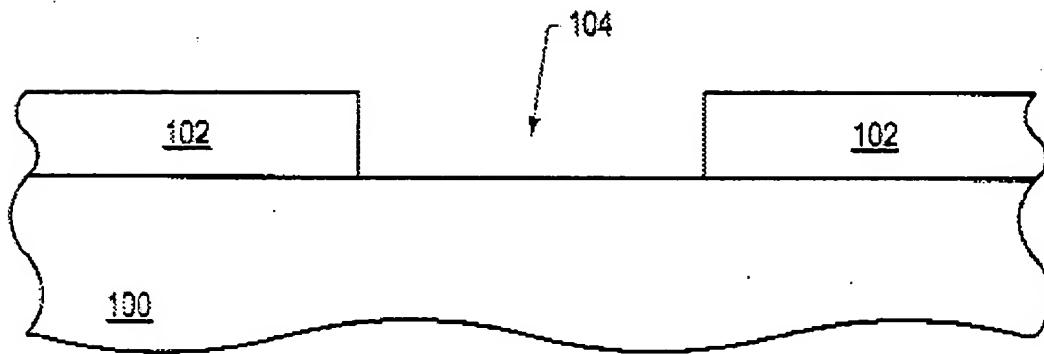


FIG. 3

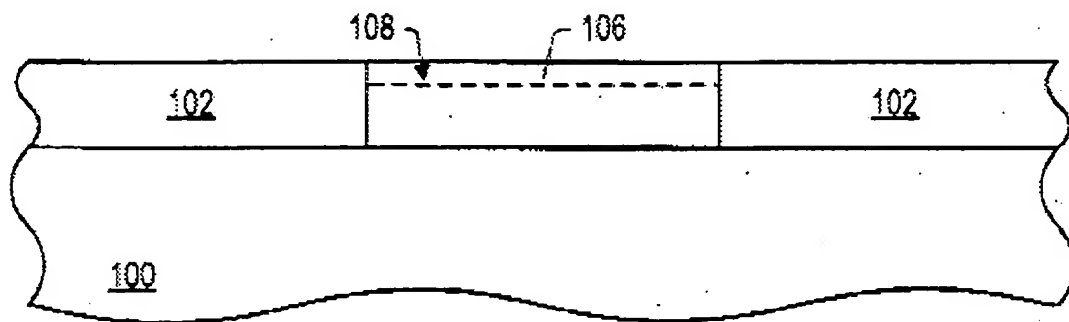
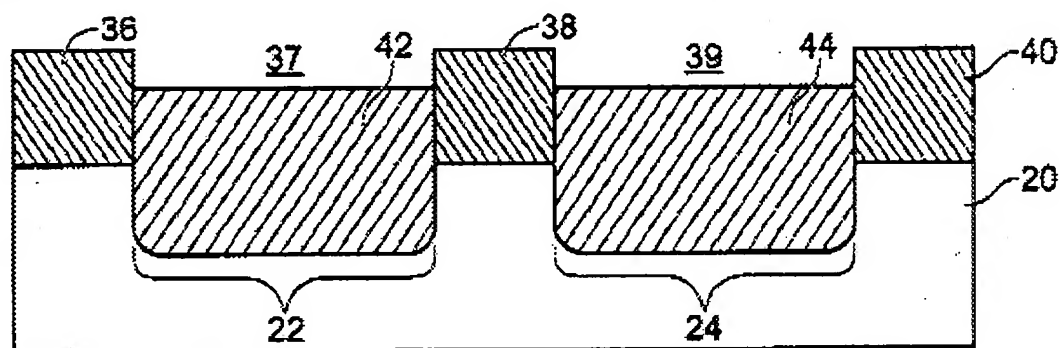


FIG. 4

Fig. 7



REGARDING CLAIM 3

Chang et al. (the abstract, fig 14,fig 15,column 3 lines 9-13) disclose a semiconductor structure use in manufacturing wherein the epitaxially-grown substrate material comprises dopant material introduced into the epitaxially-grown substrate material as the epitaxially-grown substrate material is grown on the epitaxial growth surface of the substrate layer.

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Similarly, Gardner et al. (the abstract, fig 7) and Hsu (the abstract, fig 9) disclose the same invention.

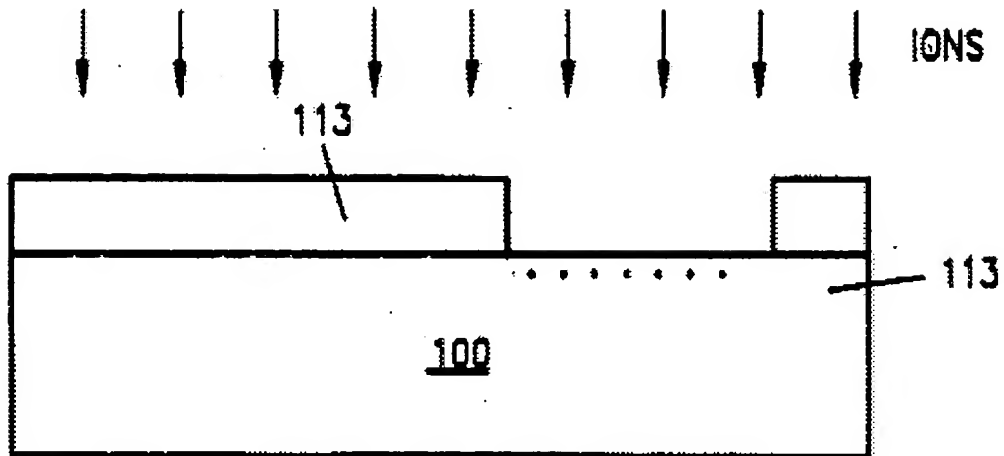


FIG. 14

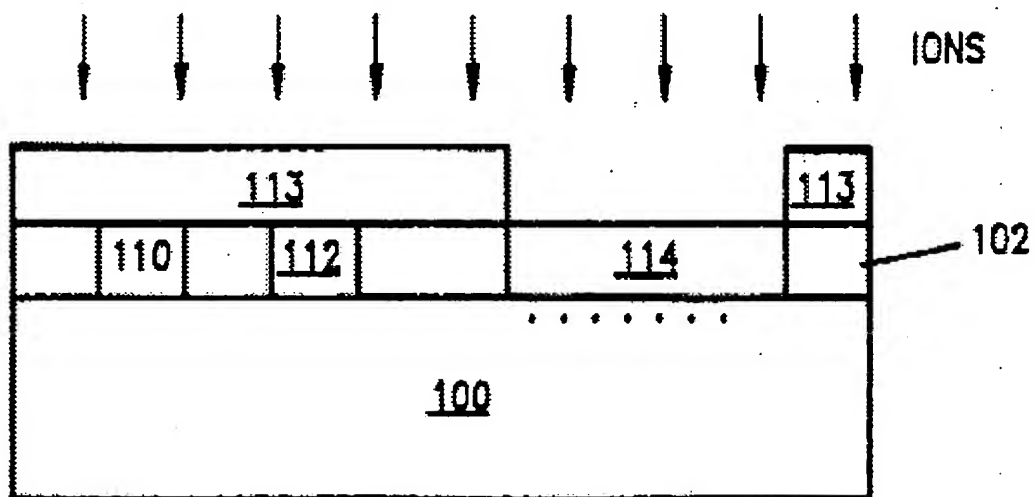


FIG. 15

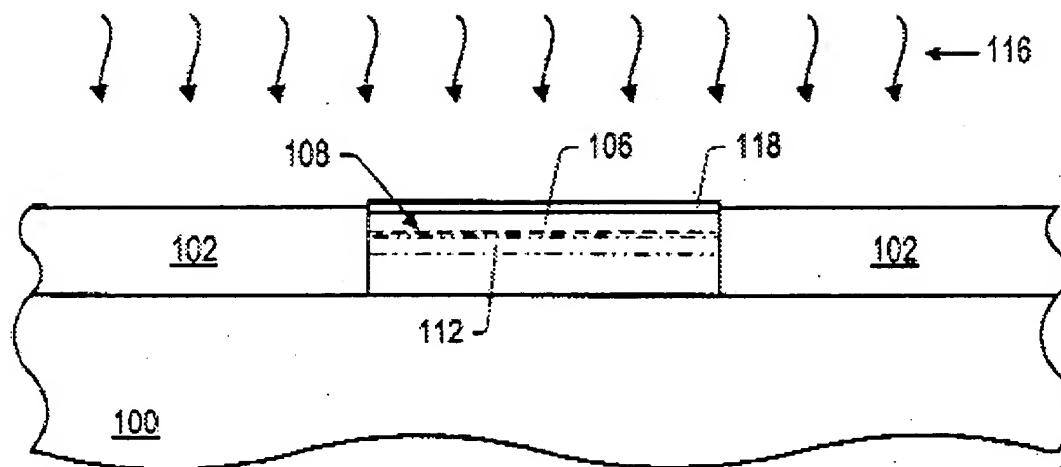
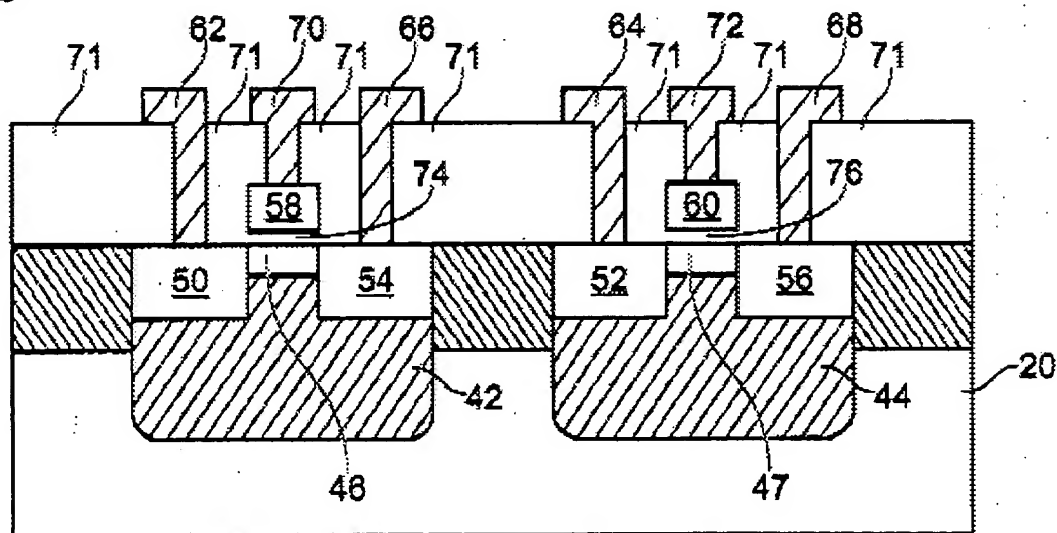


FIG. 7

Fig. 9



REGARDING CLAIM 4

Hsu discloses (fig 7, fig 9) a second active regions, meanwhile since both Chang (the abstract) and Gardner (in the Background of the invention) disclose one common structures of a plurality of active VLSI transistors built on the same substrate.; these structures will inherently have a second active regions and a third isolation regions

6. Claim 2, 6, 10 are rejected under 35 U.S.C. 102 (e) as being anticipated by Hsu.

REGARDING CLAIM 2

Hsu (fig 9, column 5, line 65-66) disclose a semiconductor structure wherein the isolation regions and the active region are formed independent of any shallow trench isolation (STI) process in which an isolation region is formed by etching a trench in the substrate layer and filling the trench with an oxide material to define an adjacent active region of the structure.

REGARDING CLAIM 6

Hsu (the abstract, fig 9) disclose a structure of CMOS device.

REGARDING CLAIM 10

As mentioned in the remark of paragraph 4 of the Office Action since the implant process and the anneal process limitations are considered non-limitations, Hsu effectively anticipated claim 10.

7. Claim 5 is rejected under 35 U.S.C. 102 (b) as being anticipated by Gardner et al.

REGARDING CLAIM 5

Gardner disclose a device (fig 6) that has an implanted and annealed structure

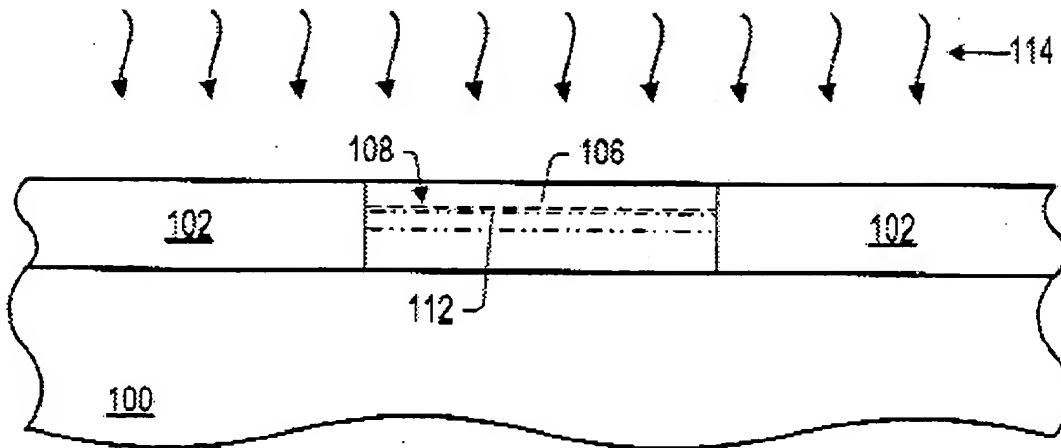


FIG. 6

Claim Rejections - 35 USC § 103

8. The following is a quotation of U.S.C. 103(a) which form the basis for all obviousness rejections set forth in this office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 7,8,9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al. (US patent 6,362,510) in view of Natzle et al. (US patent 6,774,000)

REGARDING CLAIM 7,8,9

Gardner et al. disclose all the invention including a pad layer (layer 118) with gate formed on pad layers and isolation layers formed on each side of the gate.

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Missing in the disclosure by Gardner et al. raised source and drain with second extender layer of source and drain.

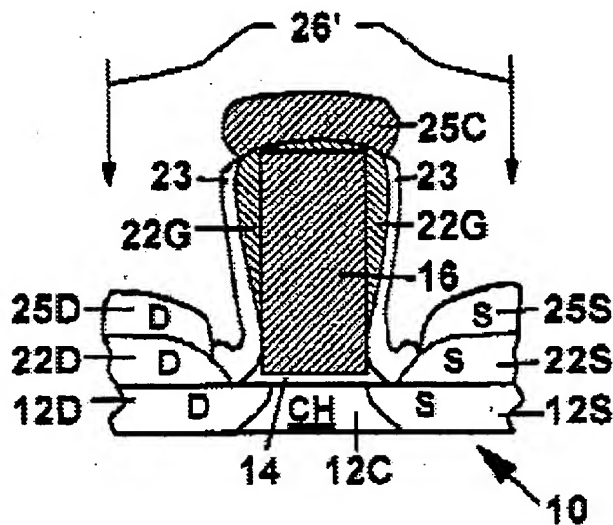
Natzle et al. (in fig 5C) teach how to fabricate a structure with raised source and drain

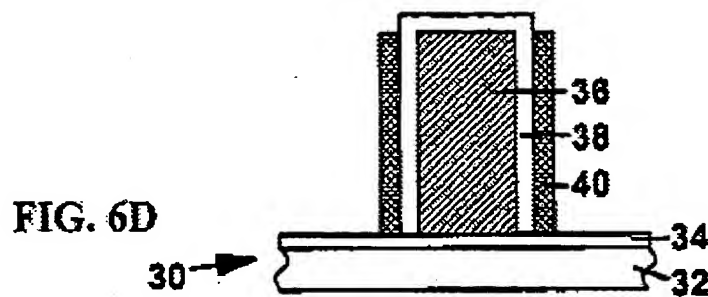
It would have been obvious to one of ordinary skill in the art the time the invention was made to complement the teachings of Gardner with the teachings by Natzle in order to come up with the invention of claim 7,8,9.

The Rationale is as the following:

A person skilled in the art at the time the invention was made would have been motivated to improved the Gartner device using a raised source and drain to take advantage of this structure as suggested by Natzle et al. thorough his disclosure (in particular in column 2 lines 55-67).

FIG. 4C





10. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner et al. (US patent 6,362,510) in view of Yu (U.S. patent 6,399,450).

REGARDING CLAIM 11.

Gardner discloses all the inventions except for a raised source and drain and gate. Yu, however, disclose a structure of CMOS technology with elevated source and drain.

It would have been obvious to one of ordinary skill in the art the time the invention was made to complement the teachings of Gardner with the teachings by Yu in order to come up with the invention of claim 11.

The Rationale is as the following:

A person skilled in the art at the time the invention was made would have been motivated to improved the Gartner device using a raised source and drain to take advantage of this structure as suggested by Yu (column 2 lines 44-51).

11. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and the page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

12. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to be abandoned (see M.P.E.P. 710.02(b)).

CONCLUSION

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thinh T Nguyen whose telephone number is 571-272-1790. The examiner can normally be reached on Monday-Friday 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached at 571-272-1787.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Thinh T. Nguyen



Art Unit 2818



David Nelms
Supervisory Patent Examiner
Technology Center 2800